Inbal Talgam-Cohen – Curriculum Vitae

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Contact Info.

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Research Interests

Algorithmic Game Theory

My Ph.D. research focuses mainly on **mechanism design**. I am interested in questions related to auctions and information, in particular, designing auctions with good revenue and social efficiency guarantees in realistic informational settings. My work studies settings in which the seller has no knowledge of bidders' distributional preferences (**prior-independent** mechanism design), or in which the bidders themselves have incomplete knowledge of their own preferences (**interdependent values model**), possibly forcing them to rely upon the seller for information (**signaling**).

In my Master's thesis I explored another area of intersection between Computer Science and Game Theory – **complexity properties of Nash equilibrium**, including the complexity of finding equilibrium as a function of the number of players.

Education

Sep. 2010 – Today

Stanford University, Stanford, California
Computer Science Ph.D. Candidate
Advisor: Prof. Tim Roughgarden

2007 – 2009

Weizmann Institute of Science, Rehovot, Israel
Computer Science M.Sc.
Summa cum laude
Dissertation: A Direct Reduction from k-Player to 2-Player Approximate Nash Equilibrium
Advisor: Prof. Uriel Feige

2002 – 2006

Tel-Aviv University, Tel-Aviv, Israel
Computer Science B.Sc.
Summa cum laude

2002 – 2006

Tel-Aviv University, Tel-Aviv Israel
Law LL.B.
Magna cum laude

Honors

2014 – 2016

The Hsieh Family Stanford Interdisciplinary Graduate Fellowship (SIGF)
A competitive university-wide program that awards three-year fellowships to outstanding doctoral students engaged in interdisciplinary research.
http://vpge.stanford.edu/SIGF/index.html

2008

Google Anita Borg Scholarship: Europe
http://www.google.com/anitaborg

Undergraduate

Tel-Aviv University Faculty of Exact Sciences **Dean's List Award**, 3-time recipient

Tel-Aviv University Faculty of Law **Dean's List Award**

Tel-Aviv University School of Computer Science **Academic Excellence Scholarship**

Employment

Summer 2013 — **Microsoft Research, Herzliya, Israel**
Research Intern
Information acquisition in auctions and combinatorial market equilibrium.

Summer 2011 — **Yahoo! Labs, Santa Clara, California**
Research Intern
Theoretic research and data analysis in online ad auctions.

2010 — **Algorithms Group, Weizmann Institute of Science, Rehovot, Israel**
Algorithms Researcher
Sparsification of flow networks.

Summer 2007
Summer 2005 — **Computational Biology Group, Weizmann Institute of Science, Rehovot, Israel**
Algorithms Researcher
Probabilistic graphical models for statistical dependencies in DNA sequences;
Maximum-likelihood algorithms for cellular phylogenetic reconstruction.

2006 – 2007 — **Supreme Court of Israel, Jerusalem, Israel**
Legal Clerk to Honorable Justice Esther Hayut
Conducted research on economic implications of legal interpretations of the Israeli law.

1998 – 2002 — **Elite Technological Unit, Israel Defense Forces (IDF)**
Programming Team Leader
Managed the design and implementation of software systems for data processing in a database environment.
Supervised a team of programmers, attained first-lieutenant rank.

Publications

Shahar Dobzinski, Michal Feldman, Inbal Talgam-Cohen and Omri Weinstein. **Welfare and Revenue Guarantees for Competitive Bundling Equilibrium**. Working paper, 2014.

Paul Deutting, Tim Roughgarden and Inbal Talgam-Cohen. **Modularity and Greed in Double Auctions**. To appear in ACM Conference on Economics and Computation (EC), 2014.

Mukund Sundararajan and Inbal Talgam-Cohen. **The Effect of Prediction Refinement on Ad Auction Objectives**. In Ad Auctions Workshop (AAW13), 2013.

Tim Roughgarden and Inbal Talgam-Cohen. **Optimal and Near-Optimal Mechanism Design with Interdependent Values**. In ACM Conference on Economics and Computation (EC), 2013. Invited to ACM Transactions on Economics and Computation (TEAC).

Hu Fu, Patrick Jordan, Mohammad Mahdian, Uri Nadav, Inbal Talgam-Cohen and Sergei Vassilvitskii. **Ad Auctions with Data**. In International Symposium on Algorithmic Game Theory (SAGT), 2012. Preliminary versions appeared in NetEcon12 and AAW12.

Tim Roughgarden, Inbal Talgam-Cohen and Qiqi Yan. **Supply-Limiting Mechanisms**. In ACM Conference on Economics and Computation (EC), 2012.

Uriel Feige and Inbal Talgam-Cohen. **A Direct Reduction from *k*-Player to 2-Player Approximate Nash Equilibrium**. In Intl. Symposium on Algorithmic Game Theory (SAGT), 2010.

Matthias Englert, Anupam Gupta, Robert Krauthgamer, Harald Raecke, Inbal Talgam-Cohen and Kunal Talwar. **Vertex Sparsifiers: New Results from Old Techniques**. In Intl. Workshop on Approximation Algorithms for Combinatorial Optimization (APPROX), 2010.

Service

2012 – Today
2009 – 2011

ACM XRDS co-Editor-in-Chief
ACM XRDS Feature Editor
XRDS http://xrds.acm.org/ is ACM's flagship publication for computing students.

2011 – Today

Reviewer for Games and Economic Behavior Journal, AAMAS14, SODA14, SAGT13, SODA13, WINE13.

2004 – 2005

CGAL Open Source Computational Geometry Library Developer
Lower envelope geometric algorithms with arbitrary-precision computation. C++ development in the generic programming paradigm. http://www.cgal.org/

Law School

Tel-Aviv Law Review editor
Member of the legal clinic for environmental justice
Pro-bono legal service to disadvantaged social circles as volunteer of Halev Bamishpat, a nonprofit for overcoming poverty in Israel

Teaching

Winter 2013

Course Assistant for CS261: Optimization and Algorithmic Paradigms
A graduate-level course taught by Prof. Serge Plotkin at Stanford University.

Spring 2012

Course Assistant for CS361B: Advanced Algorithms
A graduate-level course taught by Prof. Serge Plotkin at Stanford University.

Winter 2008

Course Assistant for CS4161: Algorithmic Game Theory
A graduate-level course taught by Prof. Uriel Feige, Dr. Robert Krauthgamer and Prof. Moni Naor at Weizmann Institute.

Volunteer Math Tutor

Graduate
Undergraduate

Volunteer of Push nonprofit organization, Rehovot, Israel.
Volunteer at Bialik-Rogozin high school, Tel-Aviv, Israel.

Programming Instructor

2001

6-month programming boot camp, IDF.

Talks

Modularity and Greed in Double Auctions. Microeconomic Theory Lunch, Stanford University, CA, Apr. 2014.

Welfare and Revenue Guarantees for Competitive Bundling Equilibrium. Game Theory and Computation Seminar, Microsoft Research New England, MA, Mar. 2014.

Welfare and Revenue Guarantees for Competitive Bundling Equilibrium. Computer Science Theory Lunch, Stanford University, CA, Mar. 2014.

Optimal and Near-Optimal Mechanisms for Interdependent Values. EconCS Seminar, Berkeley, CA, Dec. 2013.

Optimal and Near-Optimal Mechanisms for Interdependent Values. Northwestern Theory Seminar, IL, Oct. 2013.

Optimal and Near-Optimal Mechanisms for Interdependent Values. EconCS Seminar, Harvard, MA, Oct. 2013.

Optimal and Near-Optimal Mechanisms for Interdependent Values. China Theory Week, Denmark, Aug. 2013.

Optimal and Near-Optimal Mechanisms for Interdependent Values. EC13, PA, Jun. 2013.

Supply-Limiting Mechanisms. Microeconomic Theory Lunch, Stanford University, CA, Apr. 2013.

Refine Predictions Ad Infinitum?. EconCS Seminar, Berkeley, CA, Mar. 2013.

Refine Predictions Ad Infinitum?. Computer Science Theory Lunch, Stanford University, CA, Feb. 2013.

Supply-Limiting Mechanisms. Computer Science Theory Lunch, Stanford University, CA, Feb. 2012.

Adding Data to an Ad Exchange. Yahoo! Labs, CA, Sep. 2011.

A Direct Reduction from *k*-Player to 2-Player Approximate Nash Equilibrium.

SAGT10, Greece, Oct. 2010.

A Direct Reduction from *k*-Player to 2-Player Approximate Nash Equilibrium. Algorithms Seminar, University of Warwick, UK, Feb. 2010.

Hardness in Games. Computer Science Graduate Seminar, Ben-Gurion University, Israel, Dec. 2009.

Patent Applications

Method of Second Price Auction with Monopoly Reserve Price and Apparatus Conducting the Same. United States Patent Application 13/629,968 filed September 28, 2012. Inventors: Sergei Vassilvitskii, Patrick Jordan, Uri Nadav, Mohammad Mahdian, Inbal Talgam-Cohen and Hu Fu.